Google™ 10 IO

Best Practices for Implementing OpenSocial in the Enterprise

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May 20, 2010

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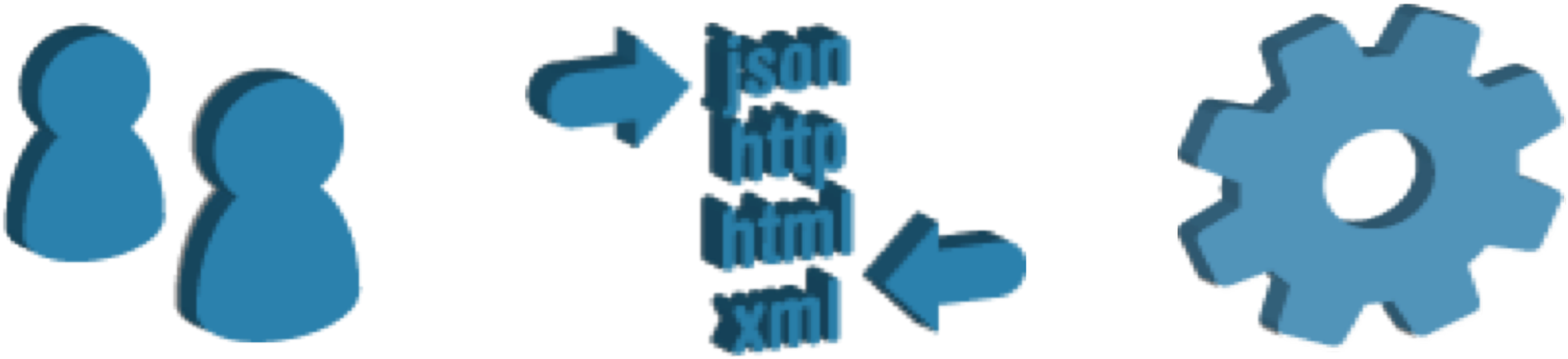
  - http://bit.ly/d4pBia
- Hashtag for this talk is: #opensocial

Agenda

- Introduction / Background
- OpenSocial: A standard Web 2.0 "Social" Component Model
- Situational Applications: Building a better dashboard
- OAuth / Security
- Integration with existing systems
- Enterprise OpenSocial challenges
- Wrap up & Summary

What is OpenSocial?



Three big things:

Social Data Model
Social API
Web 2.0 Component Model (Gadgets)

Social Data Model

Provides standard representation of People (profile), their relationships ("friends"), and Activities ("user streams or feeds")

Can easily be extended to apply in domain specific "social networks”

It’s just a connected graph of people!

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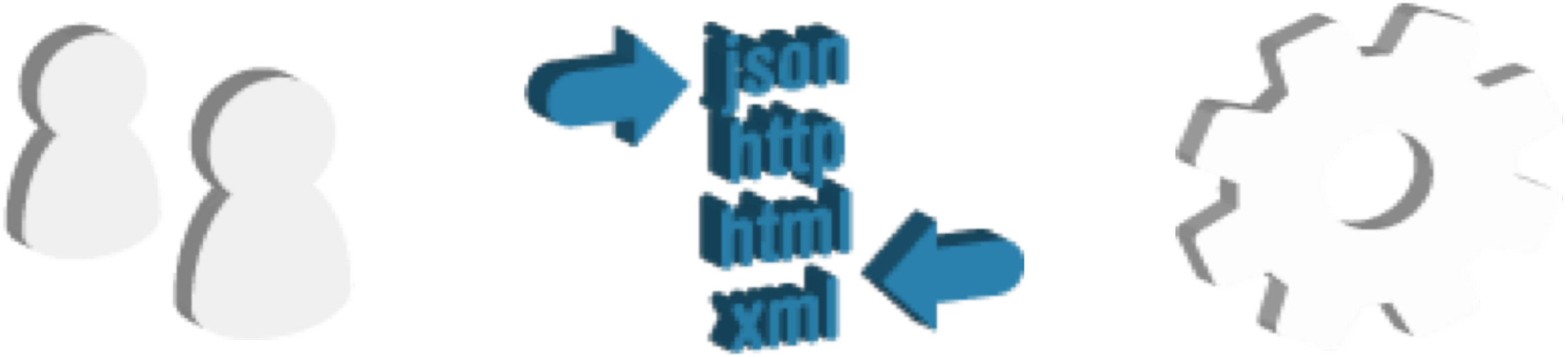
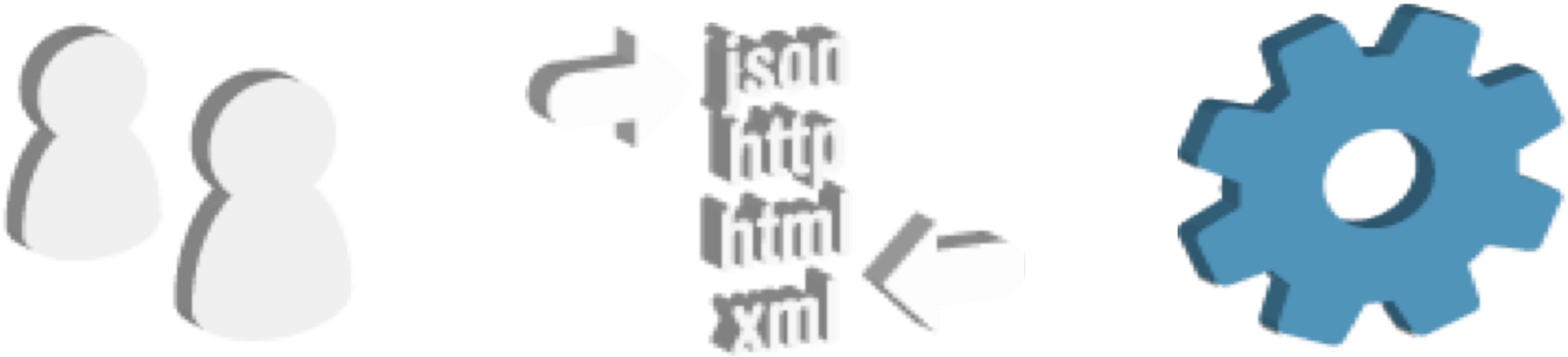
Core APIs



- Provide standard API access to people, their relationships & activities and social data.
- Available in REST or JavaScript APIs.

Gadgets



- Standards based, Web 2.0 component model
  - Provides for modular client application development & deployment
  - Designed to be embeddable in third party sites

- Social APIs & programming model in JavaScript

- Reference implementation in open source (Apache Shindig)
  - Google donated iGoogle gadget technology
  - Support for REST APIs
  - Java & PHP
  - In production at most social networks

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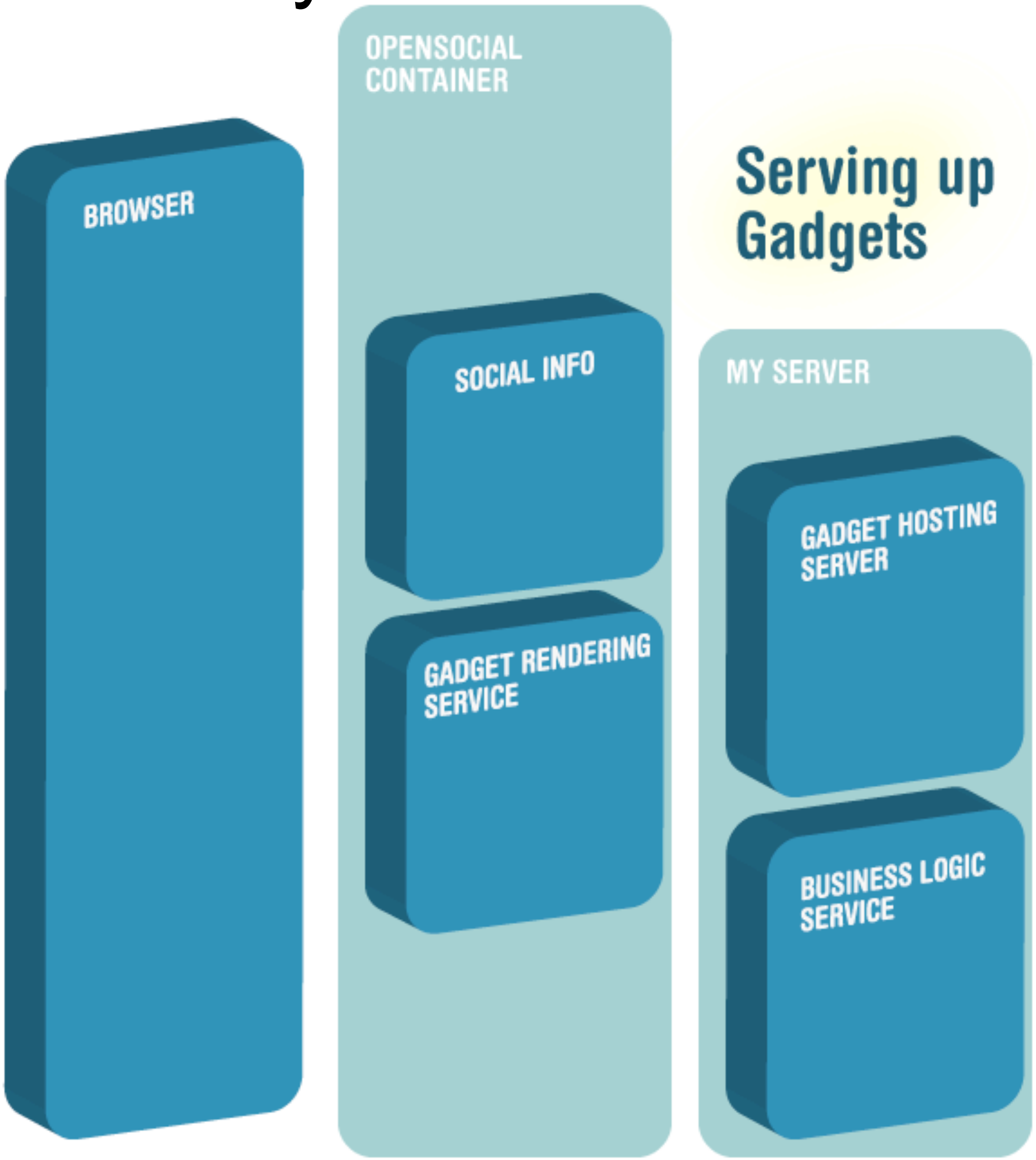
Gadgets: How they work



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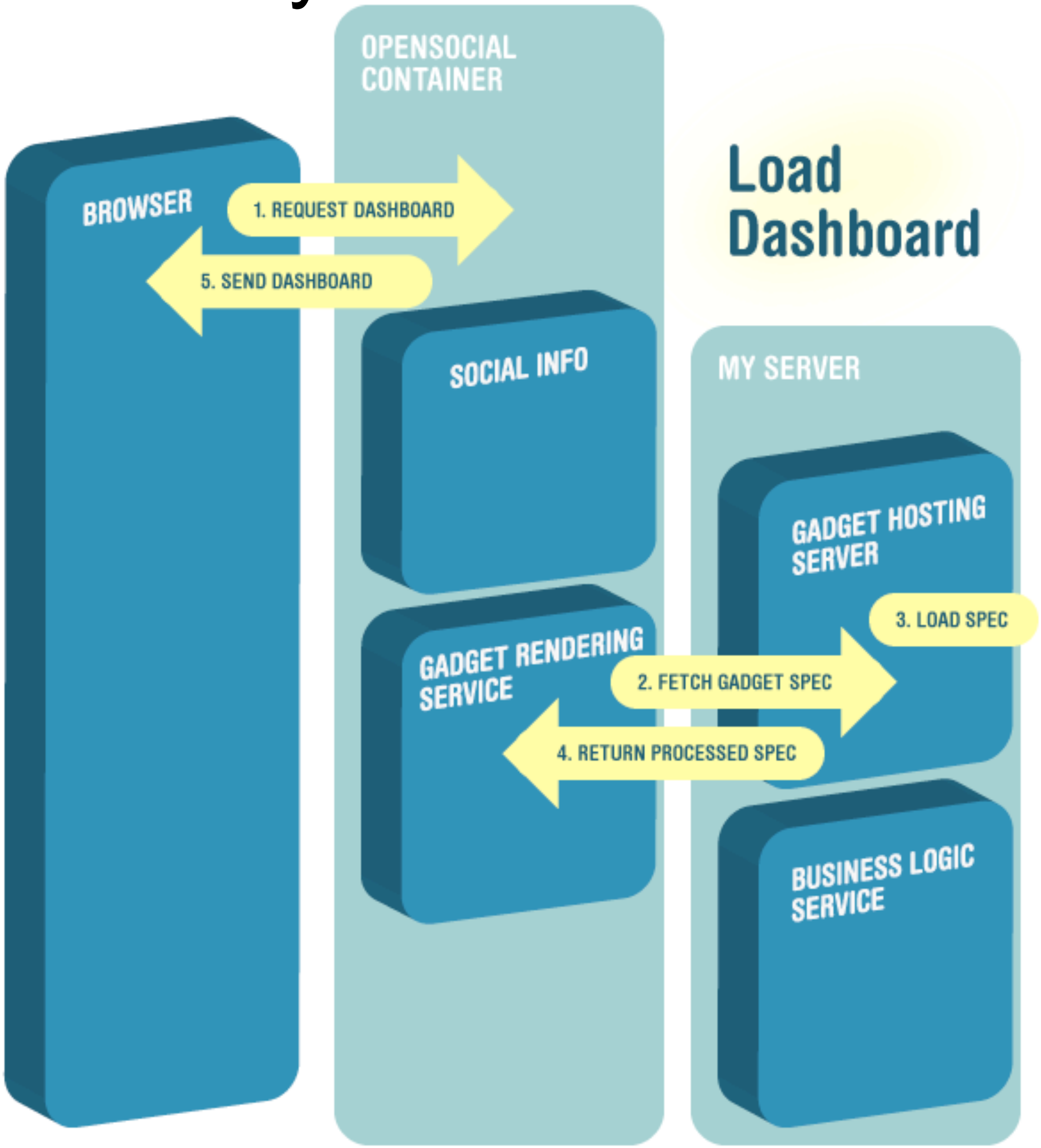
Gadgets: How they work



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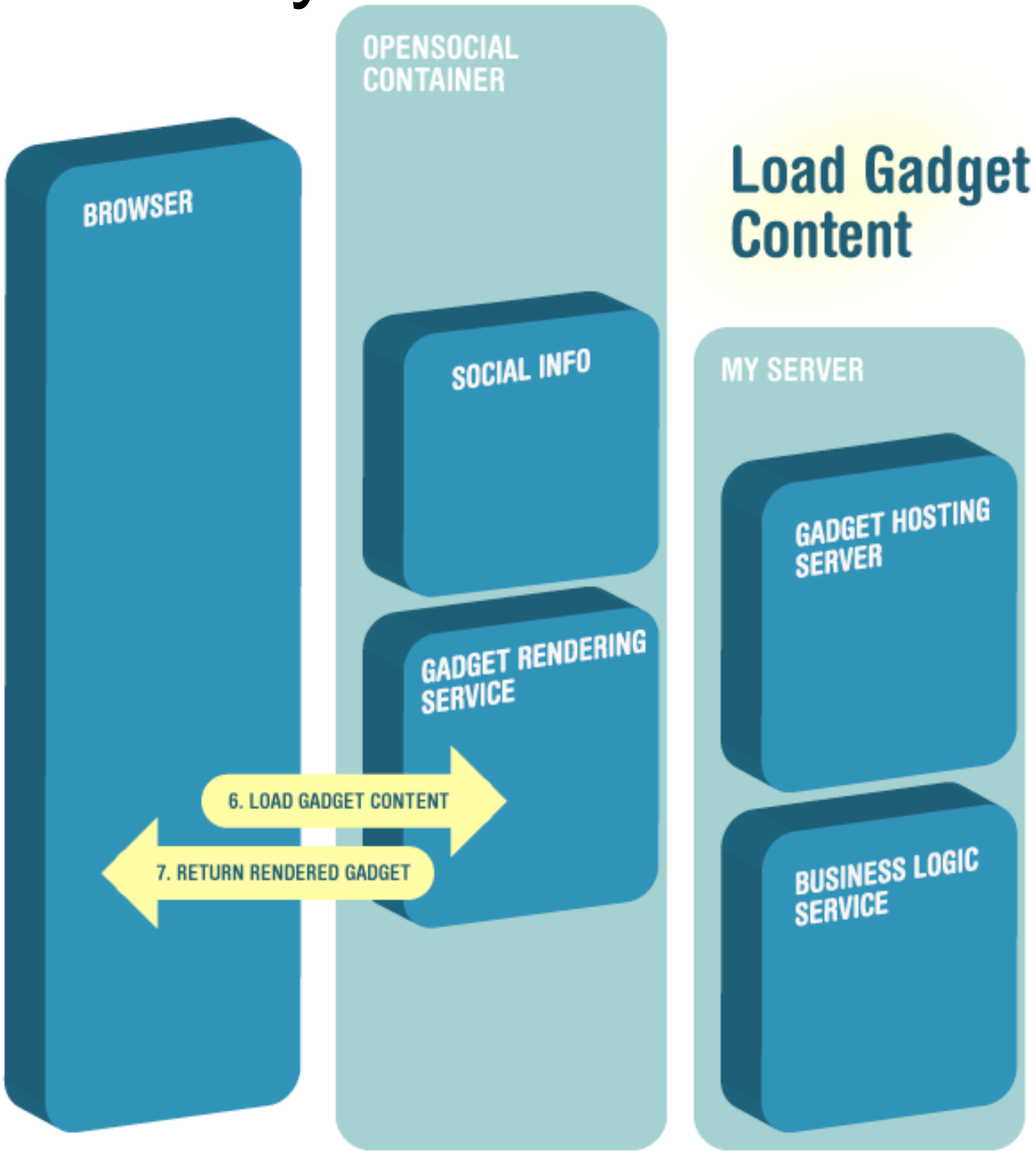
Gadgets: How they work



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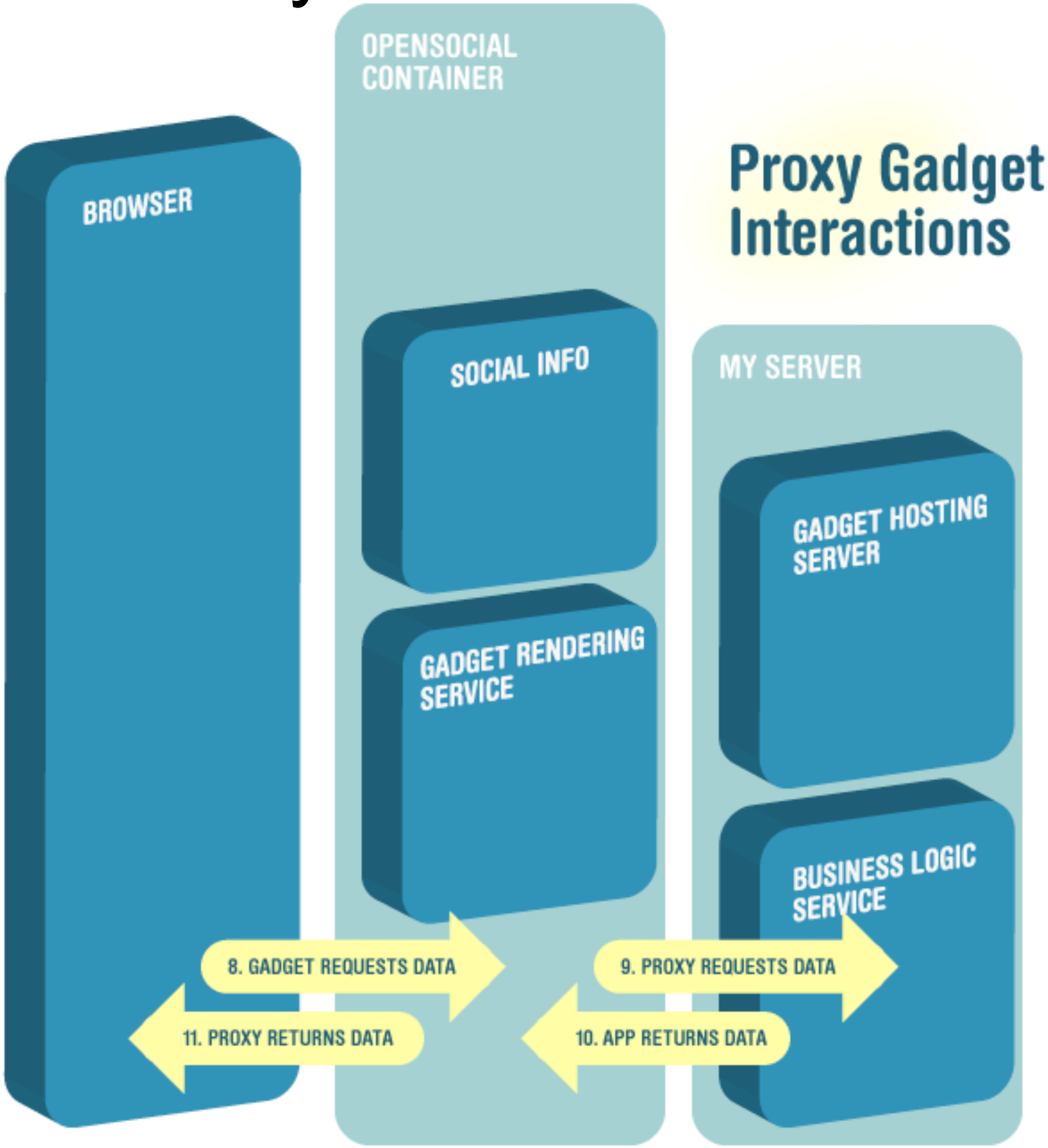
Gadgets: How they work



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Enterprise OpenSocial Roots/Collaboration

- A group of Enterprise companies looking to use OpenSocial technology began discussing and meeting in 2009
- Their goal was to form a collective Enterprise voice in order to influence OpenSocial evolution towards a more business centric approach
- In Sept 09 held first “Enterprise OpenSocial Meetup”
    - Resulted in a series of spec updates for 1.0 and 1.x
    - Kicked off effort to publish an “Enterprise OpenSocial Whitepaper”

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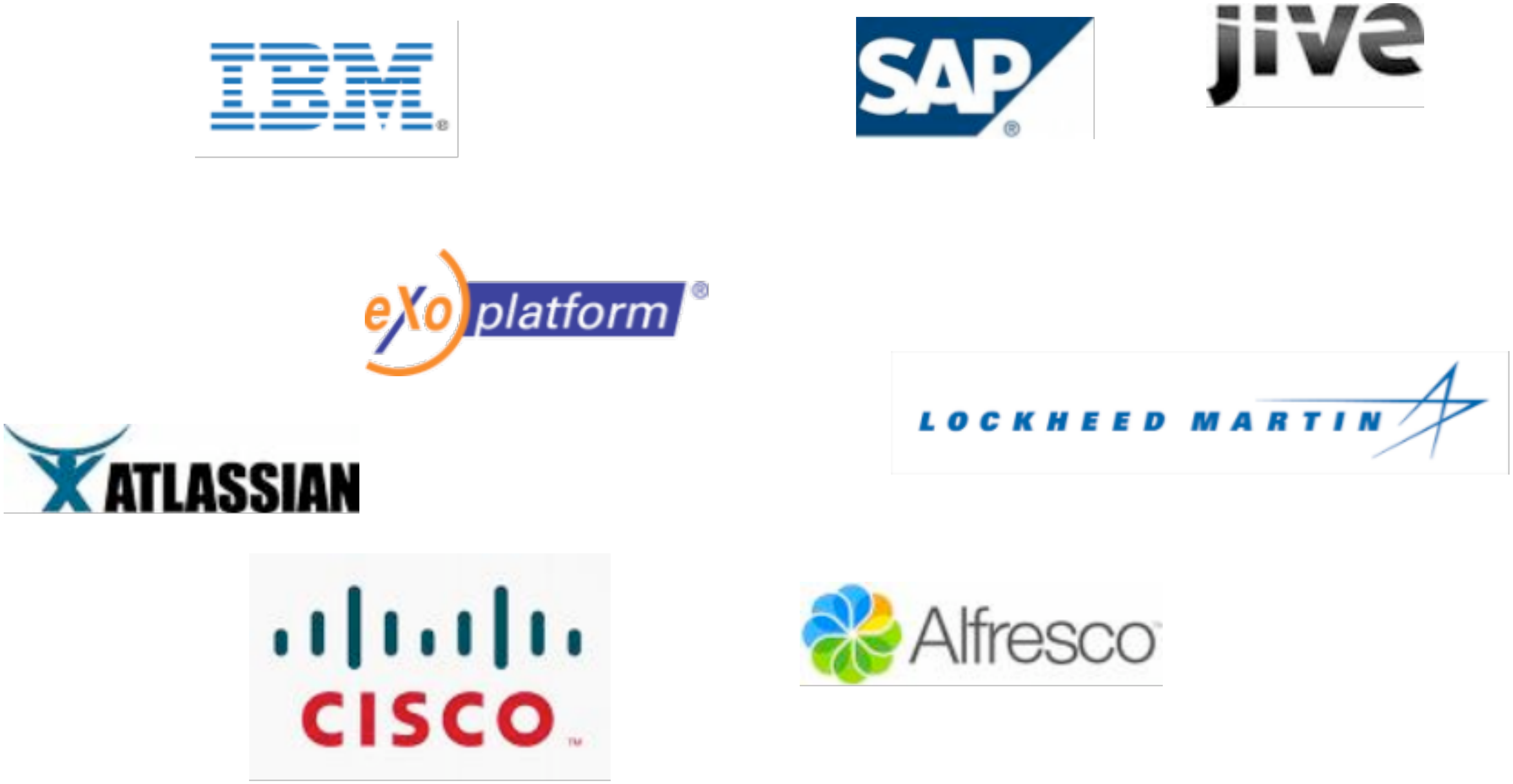
Some Enterprise OpenSocial early Adopters



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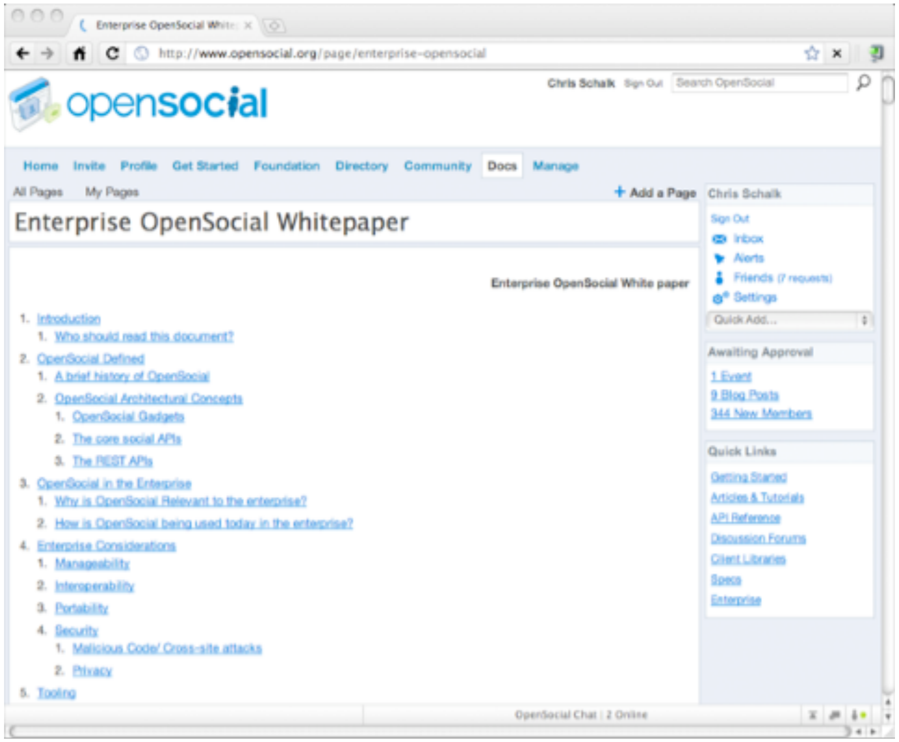
The Enterprise OpenSocial Whitepaper

Enterprise OpenSocial considerations

- ○ Manageability
- ○ Interoperability
- ○ Portability
- ○ Security
- ○ Tooling



Enterprise OpenSocial Whitepaper

Enterprise OpenSocial White paper

1. Introduction
   1. Who should read this document?
2. OpenSocial Defined
   1. A brief history of OpenSocial
   2. OpenSocial Architectural Concepts
      1. OpenSocial Gadgets
      2. The core social APIs
      3. The REST APIs
3. OpenSocial in the Enterprise
   1. Why is OpenSocial Relevant to the enterprise?
   2. How is OpenSocial being used today in the enterprise?
4. Enterprise Considerations
   1. Manageability
   2. Interoperability
   3. Portability
   4. Security
      1. Malicious Code/ Cross-site attacks
      2. Privacy
5. Tooling

http://www.opensocial.org/page/enterprise-opensocial

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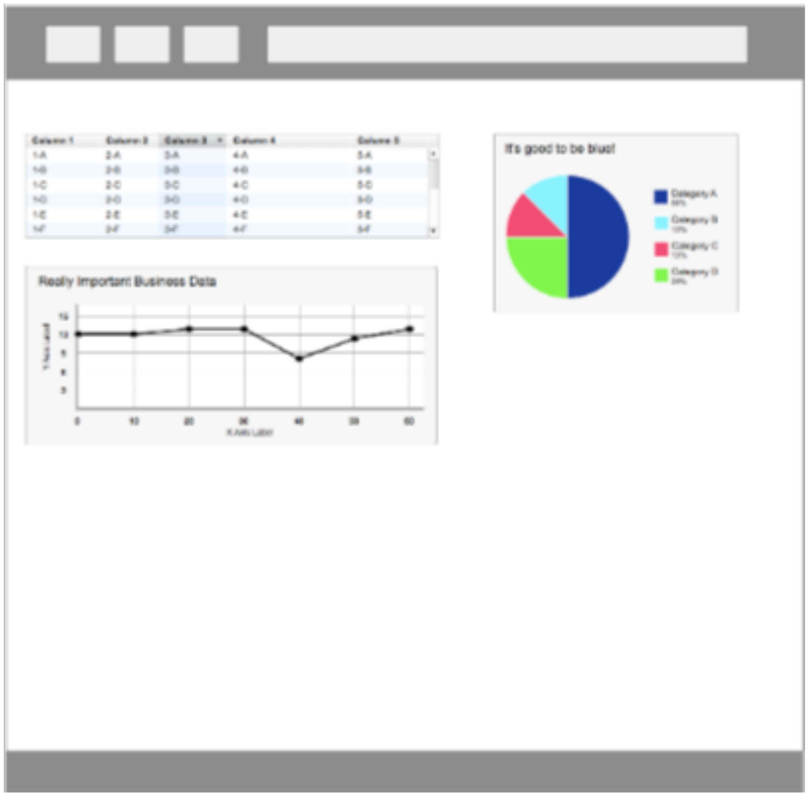
It’s all about aggregation…

- JSR 168 (and now 286) portlets
  - Server side aggregation
  - Java EE programming model



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1-A	2-A	3-A	4-A	5-A
1-B	2-B	3-B	4-B	5-B
1-C	2-C	3-C	4-C	5-C
1-D	2-D	3-D	4-D	5-D
1-E	2-E	3-E	4-E	5-E
1-F	2-F	3-F	4-F	5-F

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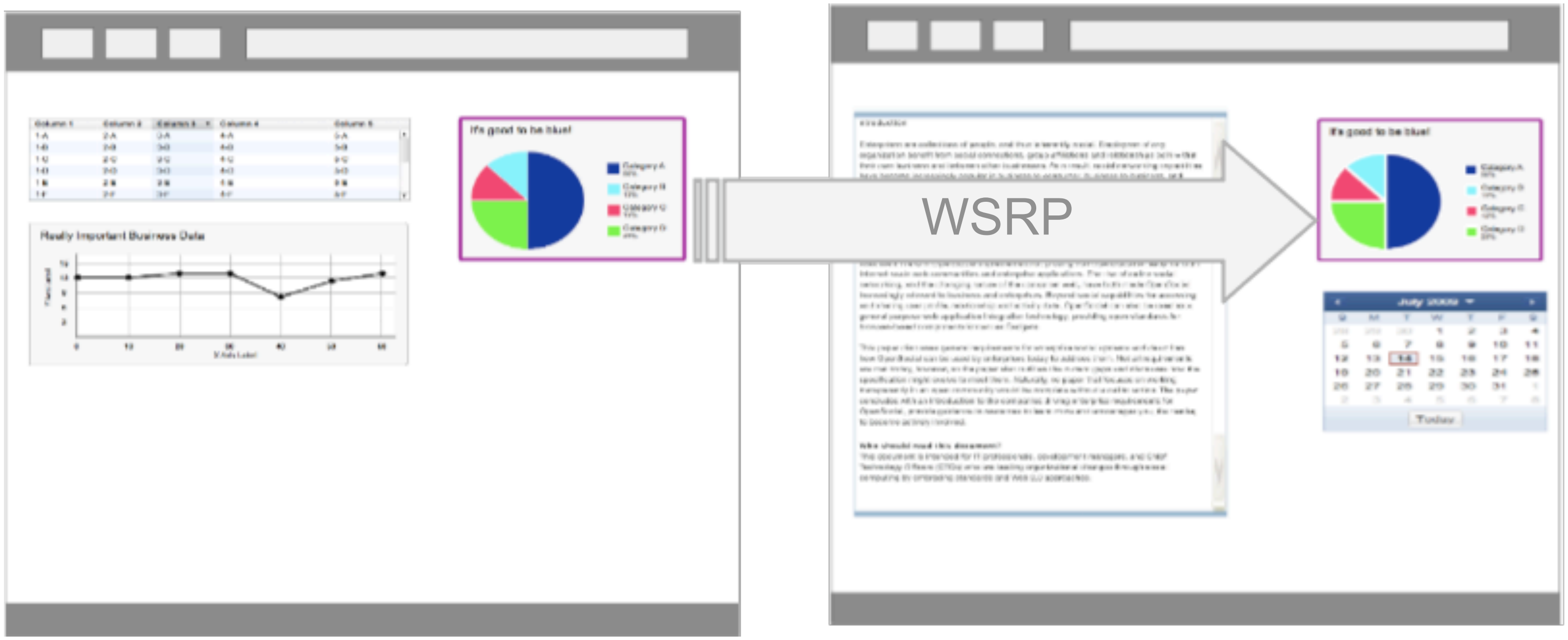
It’s all about aggregation…

- How do we share content between J2EE and .Net portals?
- Web Services for Remote Portlets
  - Builds on WS* specifications
  - Sends markup fragments via SOAP



WSRP is an open, standards based mechanism for server side aggregation (portal server <->portal server)

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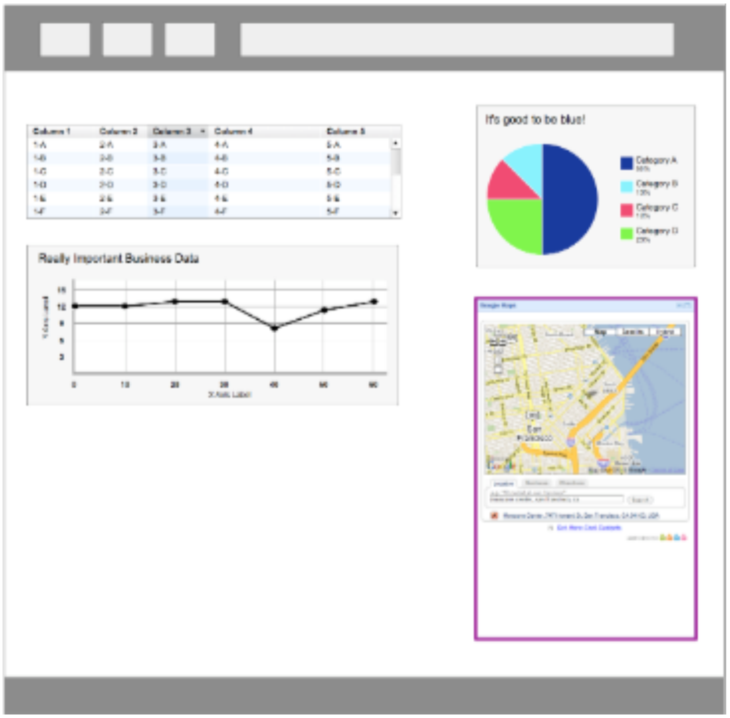
It’s all about aggregation… *on the client.*

AJAX

- I/O
- Event Management
- Widget Libraries
- Animation & Effects
- Logging & Debugging
- Internationalization, Accessibility
- DOM Query & Manipulation
- URL functions

Gadgets

- Templates, OSML
- Preferences, App Data
- Gadget Life Cycle
- Inter-application events
- Views & Features
- OAuth, Request Signing
- Data Pipelining
- Features



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1-D	2-D	3-D	4-D	5-D
1-E	2-E	3-E	4-E	5-E
1-F	2-F	3-F	4-F	5-F

Gadgets add a first class, open, standard based, Web 2.0 component model around AJAX programming.

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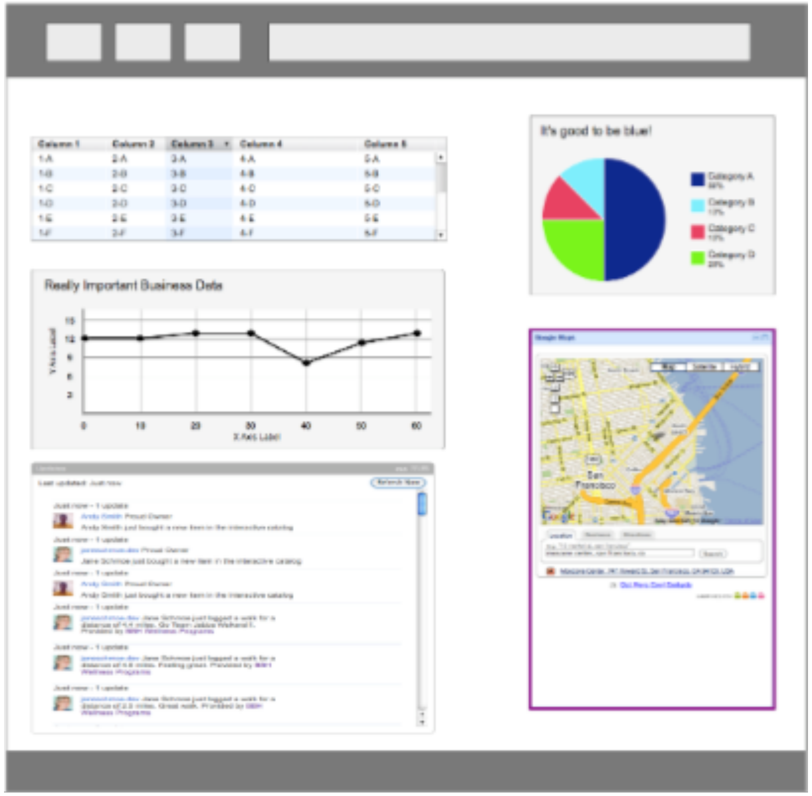
It’s all about aggregation… *on the client.*

Social APIs

- People
- Relationships
- Groups
- Activities
- Application Data
- Albums
- Media Items
- Messages



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1-C	2-C	3-C	4-C	5-C
1-D	2-D	3-D	4-D	5-D
1-E	2-E	3-E	4-E	5-E
1-F	2-F	3-F	4-F	5-F

Social Gadgets add a first class concepts of people, relationships, and activities to the standard Web 2.0 component model.

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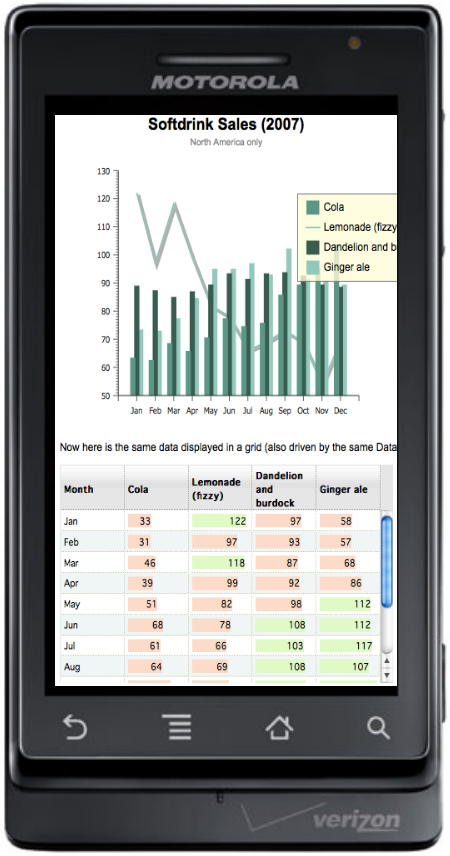
Even when the client is *“smart”*

Leverage gadgets as a consistent programming model “hybrid” style applications

REST APIs when you “go native”



Now here is the same data displayed in a grid (also driven by the same Data

Month	Cola	Lemonade (fizzy)	Dandelion and burdock	Ginger ale
Jan	33	122	97	58
Feb	31	97	93	57
Mar	46	118	87	68
Apr	39	99	92	86
May	51	82	98	112
Jun	68	78	108	112
Jul	61	66	103	117
Aug	64	69	108	107

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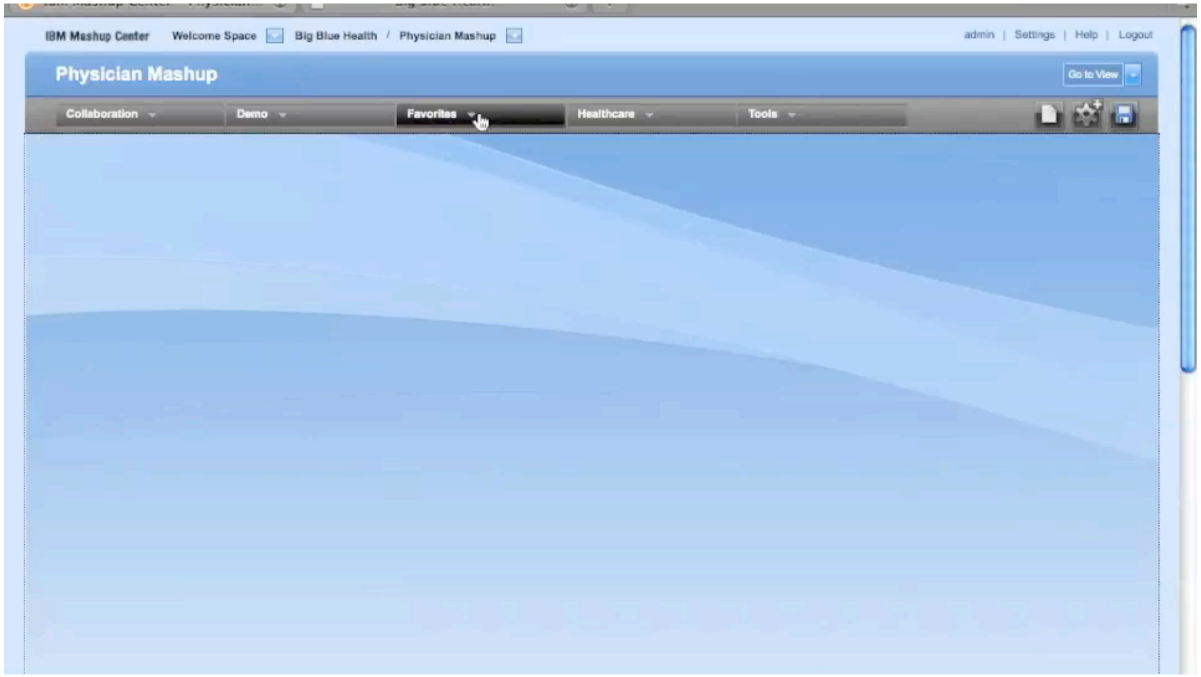
OpenSocial in action: Building a better Dashboard



- Smarter Healthcare: An example physician mashup
  - Easy construction of pre-built gadgets
  - Multiple sources of data
  - Secure, inter-gadget communications (eventing)

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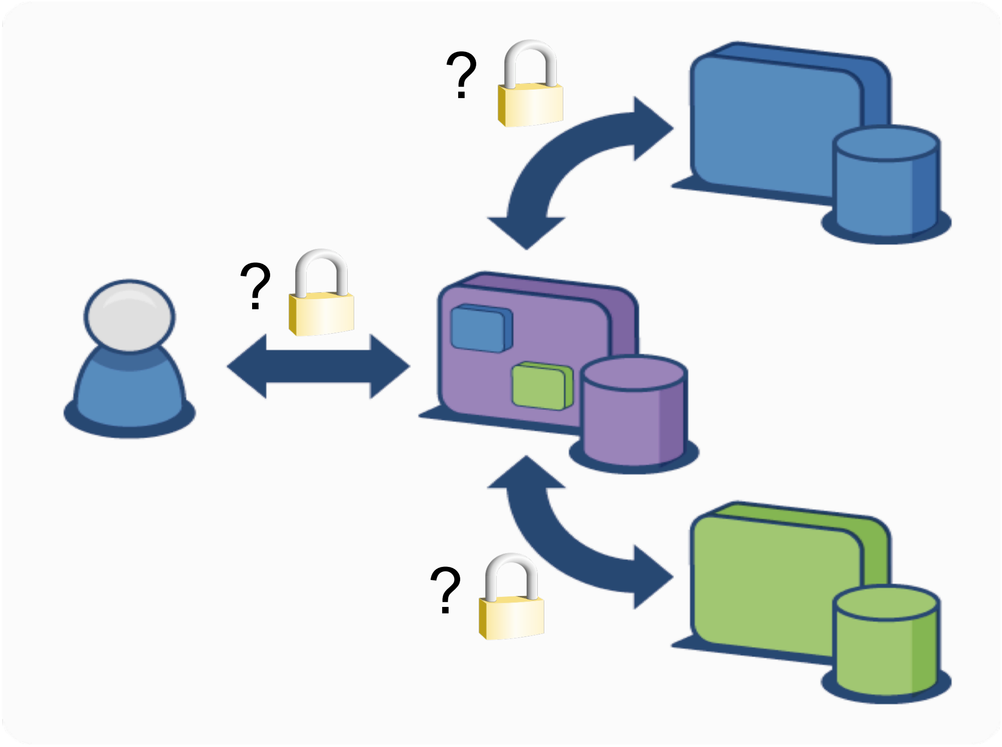
Problem Statement

- Secure access to enterprise systems behind the firewall.



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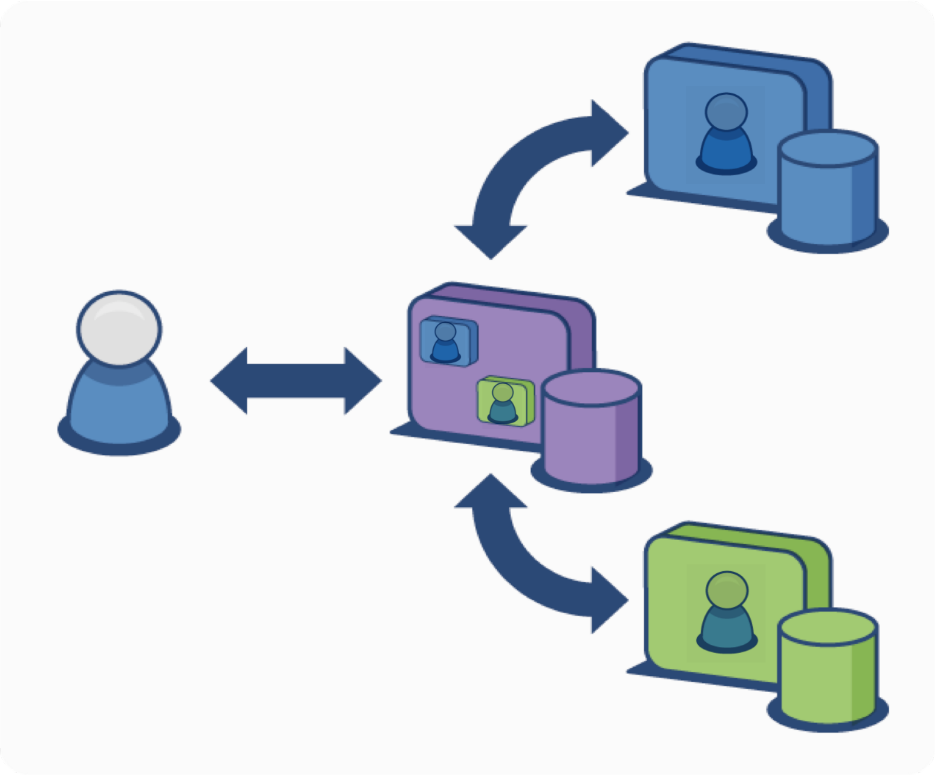
Authentication Strategies

- Where Enterprise Developers Start
  - Basic Auth - not secure
  - SSO - configuration overhead/cost
  - SAML
  - Open ID

Authentication and Identity

- Sharing secret credentials means sharing identity
  - Applications can act as you
  - Even change your password and lock you out if they wish.



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OAuth Defined

- Open standard for API access delegation
- OAuth allows the User to grant access to private resources on one site to another site.
- OAuth is about giving access to your stuff without sharing your identity at all (or its secret parts)
- Ability to invalidate OAuth Tokens from Service Provider

"It's like a valet key for an application"

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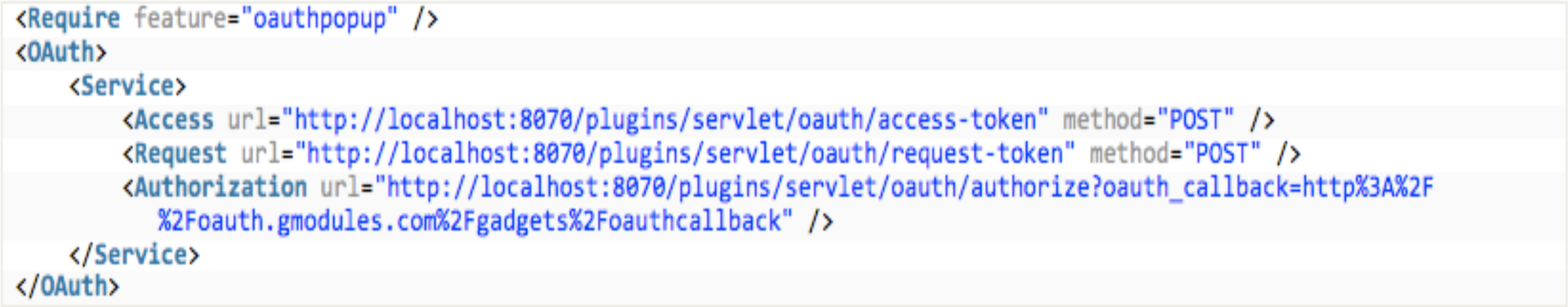
OAuth in OpenSocial

- Ease of use
- Integrated UI
- Container can associate oauth token/secret with account to automatically sign in



```
<Require feature="oauthpopup" />
<OAuth>
    <Service>
        <Access url="http://localhost:8070/plugins/servlet/oauth/access-token" method="POST" />
        <Request url="http://localhost:8070/plugins/servlet/oauth/request-token" method="POST" />
        <Authorization url="http://localhost:8070/plugins/servlet/oauth/authorize?oauth_callback=http%3A%2F
          %2Foauth.gmodules.com%2Fgadgets%2Foauthcallback" />
    </Service>
</OAuth>
```

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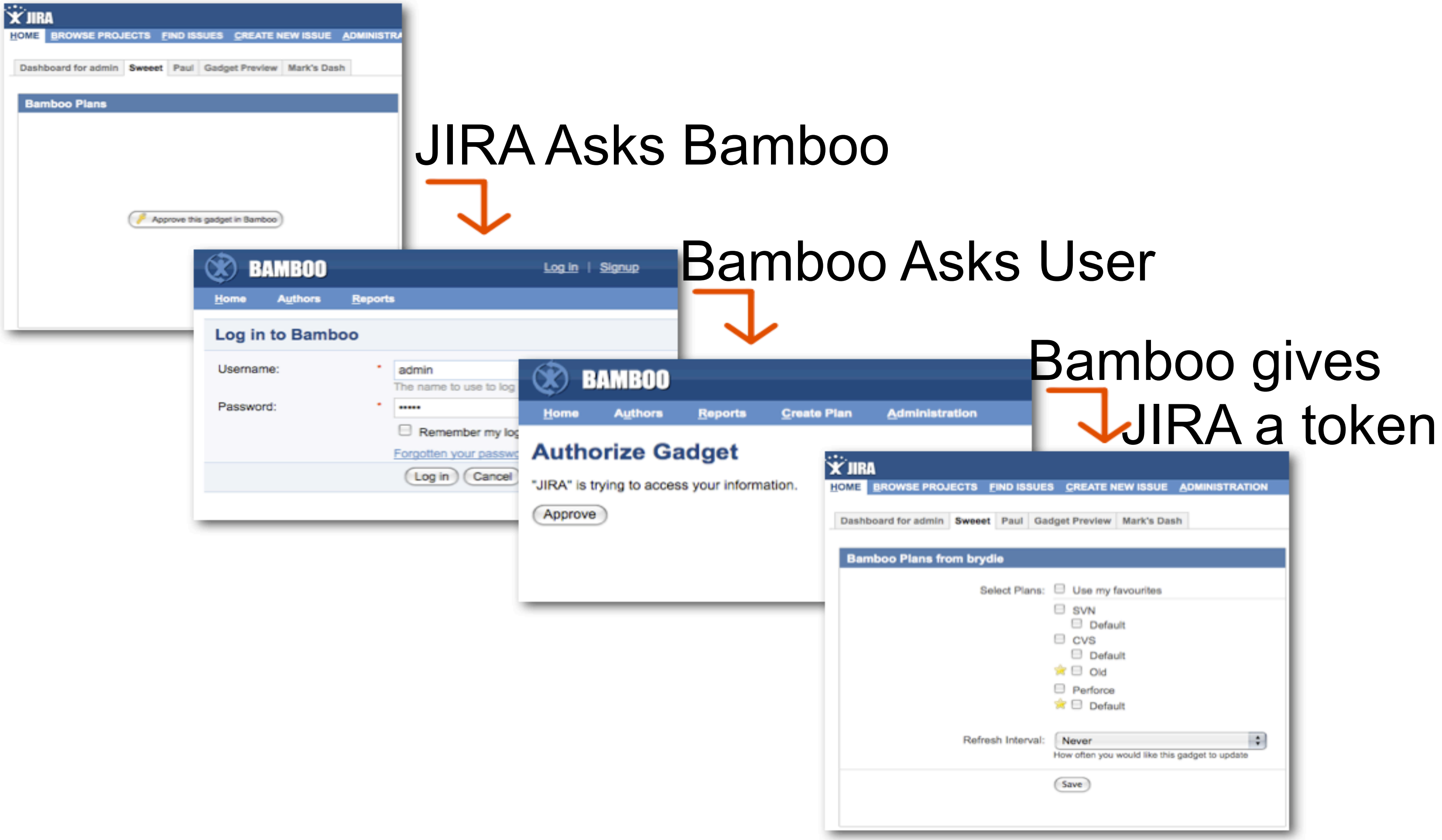
OAuth Illustrated



Bamboo Plans

JIRA Asks Bamboo

Log in to Bamboo

Username: * admin

The name to use to log

Password: * •••••

□ Remember my log

Forgotten your passw

Bamboo Asks User

Authorize Gadget

"JIRA" is trying to access your information.

Bamboo gives JIRA a token

Bamboo Plans from brydie

Select Plans: □ Use my favourites
□ SVN
□ Default
□ CVS
□ Default
★ □ Old
□ Perforce
★ □ Default

Refresh Interval: Never

How often you would like this gadget to update

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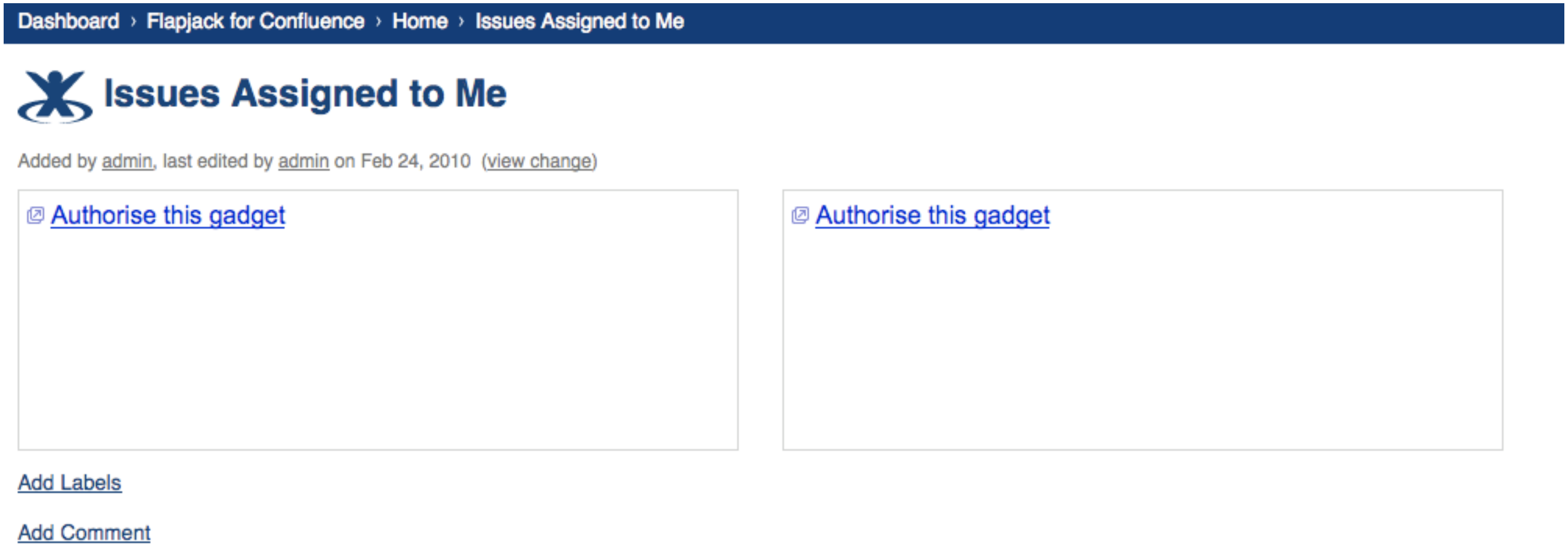
Where we're working...

- Multiple gadgets from same back end not sharing OAuth Credentials



Dashboard › Flapjack for Confluence › Home › Issues Assigned to Me

Issues Assigned to Me

Added by admin, last edited by admin on Feb 24, 2010 (view change)

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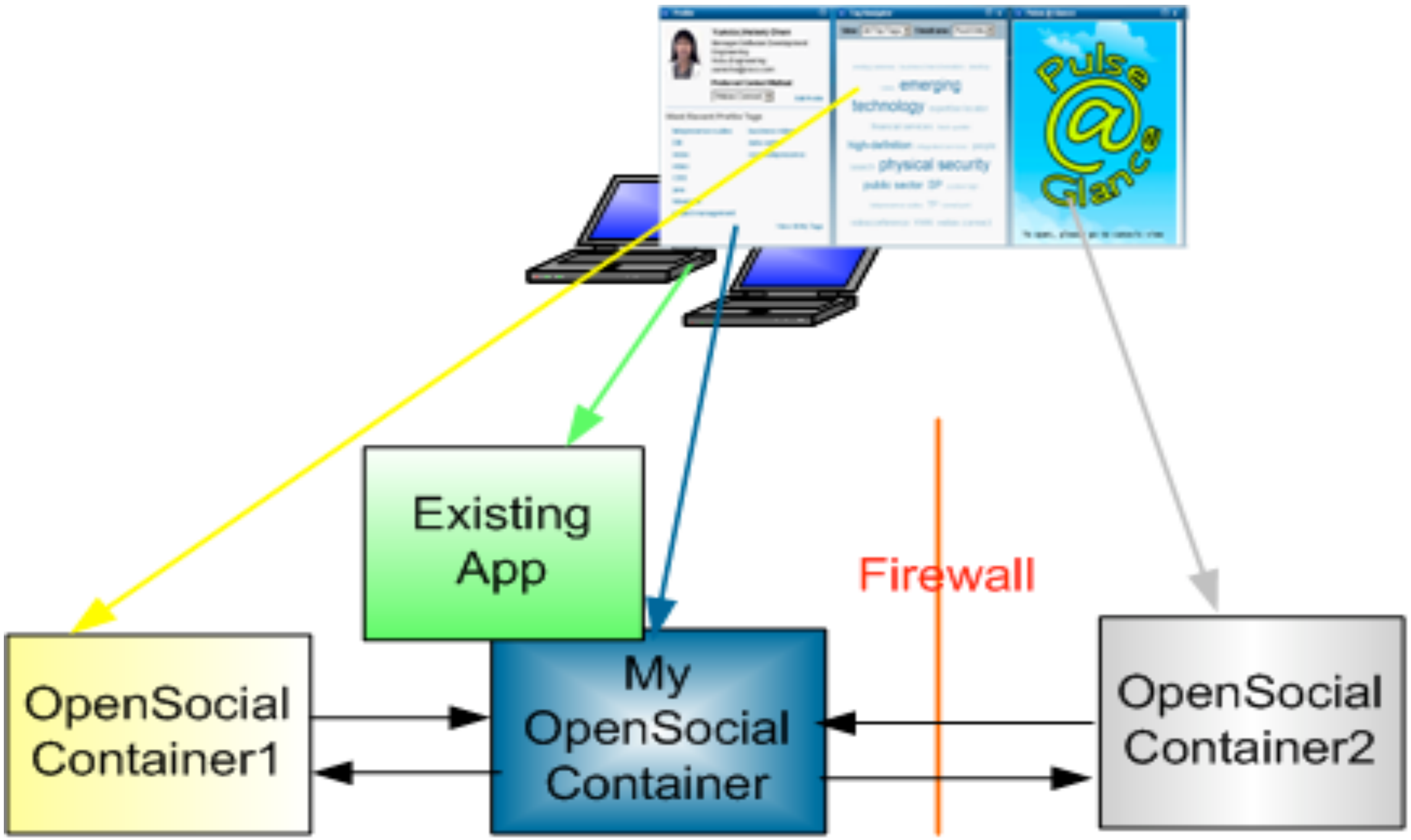
Before you start...plan

What's the deployment requirement?



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Challenges

1. Granular Authorization Controls
2. Single Enterprise ID
3. Inter-Gadget Communication
4. No Guidelines for Extension

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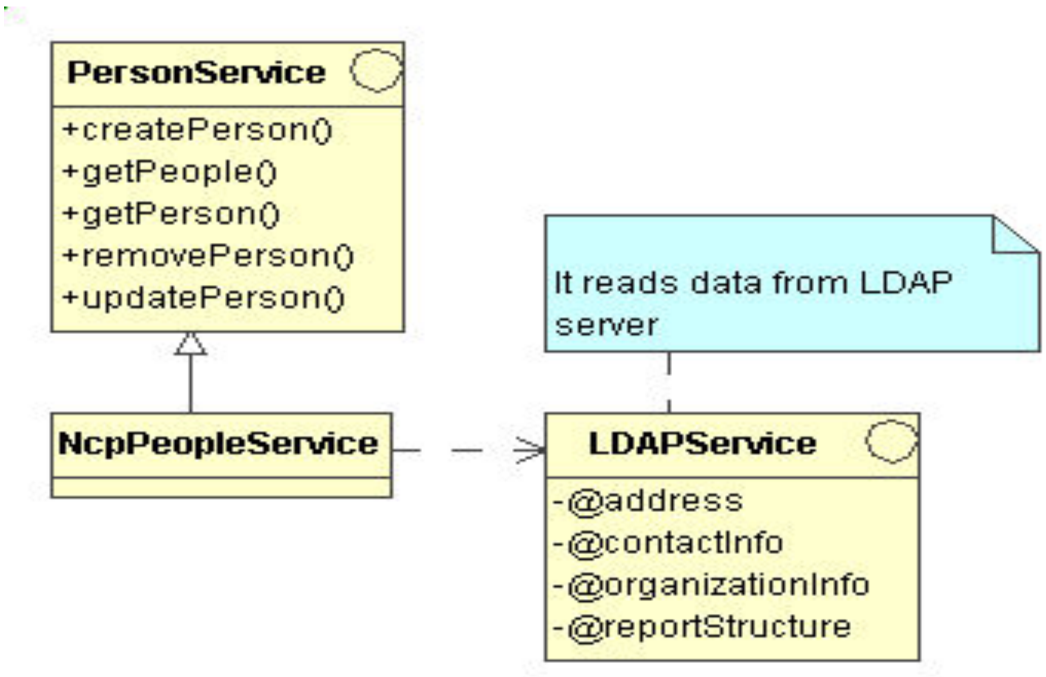
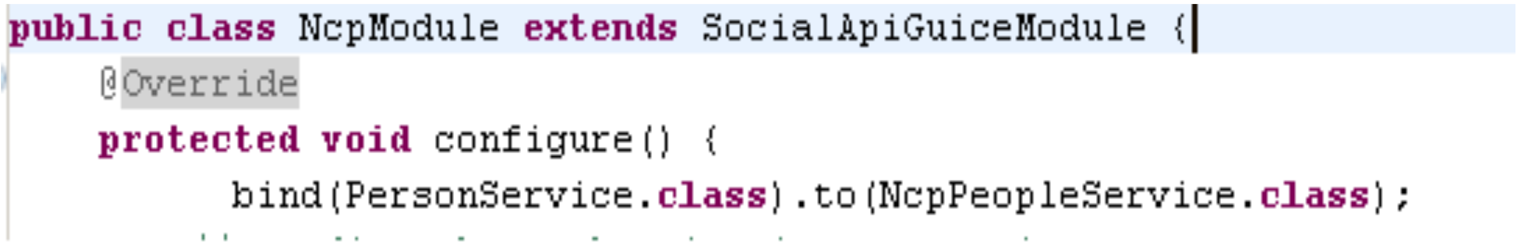
People & LDAP Integration





```
public class NcpModule extends SocialApiGuiceModule {
    @Override
    protected void configure() {
          bind(PersonService.class).to(NcpPeopleService.class);
```

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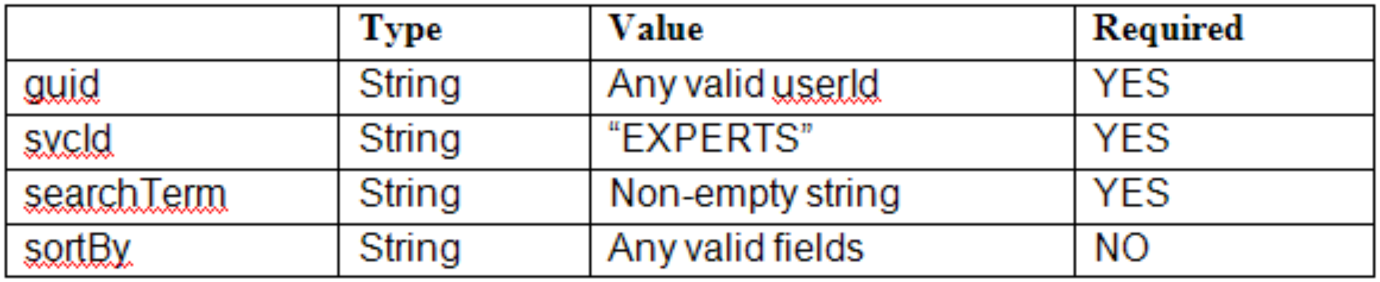
Enterprise extension: Cisco's approach

- URL extension format:

/**pulseservices**/*{guid}*/*{svcId}*?param1=value1&...



	Type	Value	Required
guid	String	Any valid userId	YES
svcId	String	“EXPERTS”	YES
searchTerm	String	Non-empty string	YES
sortBy	String	Any valid fields	NO

- Response data format: XML and JSON
- API
  - REST
  - RPC
  - JavaScript

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Integration with the existing systems <demo>

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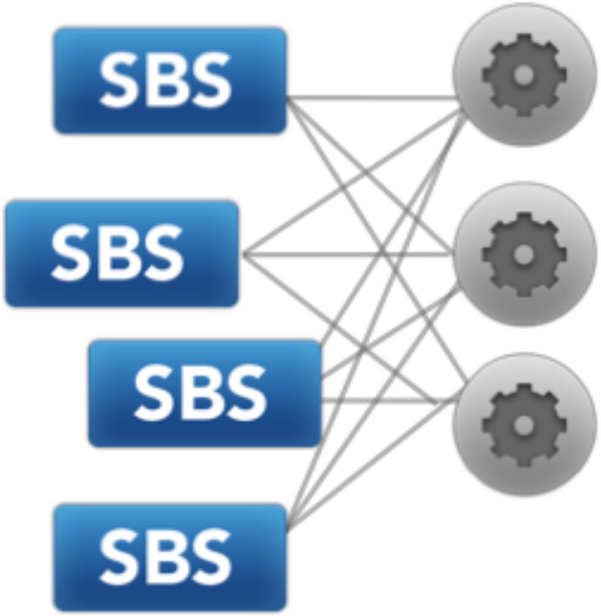
Challenge: Single vs. Multiple Endpoints for OAuth

- In consumer world, oAuth is simple for developers with a single Facebook, a single Twitter and a single iGoogle, etc.
- Many instances of a single product means an explosion of oAuth consumer keys/secrets



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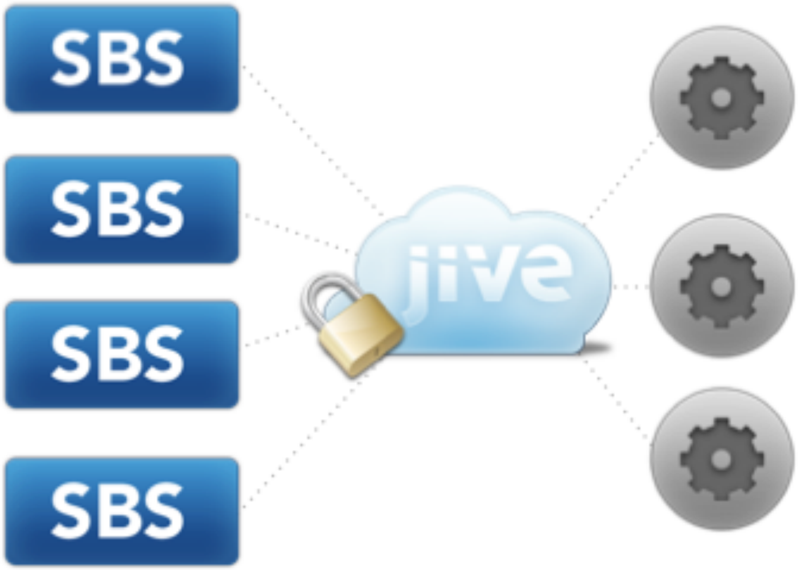
One Solution: Cloud-based Connection Broker

Mimic the consumer model: developers get a single consumer key and consumer secret from a trusted connection broker



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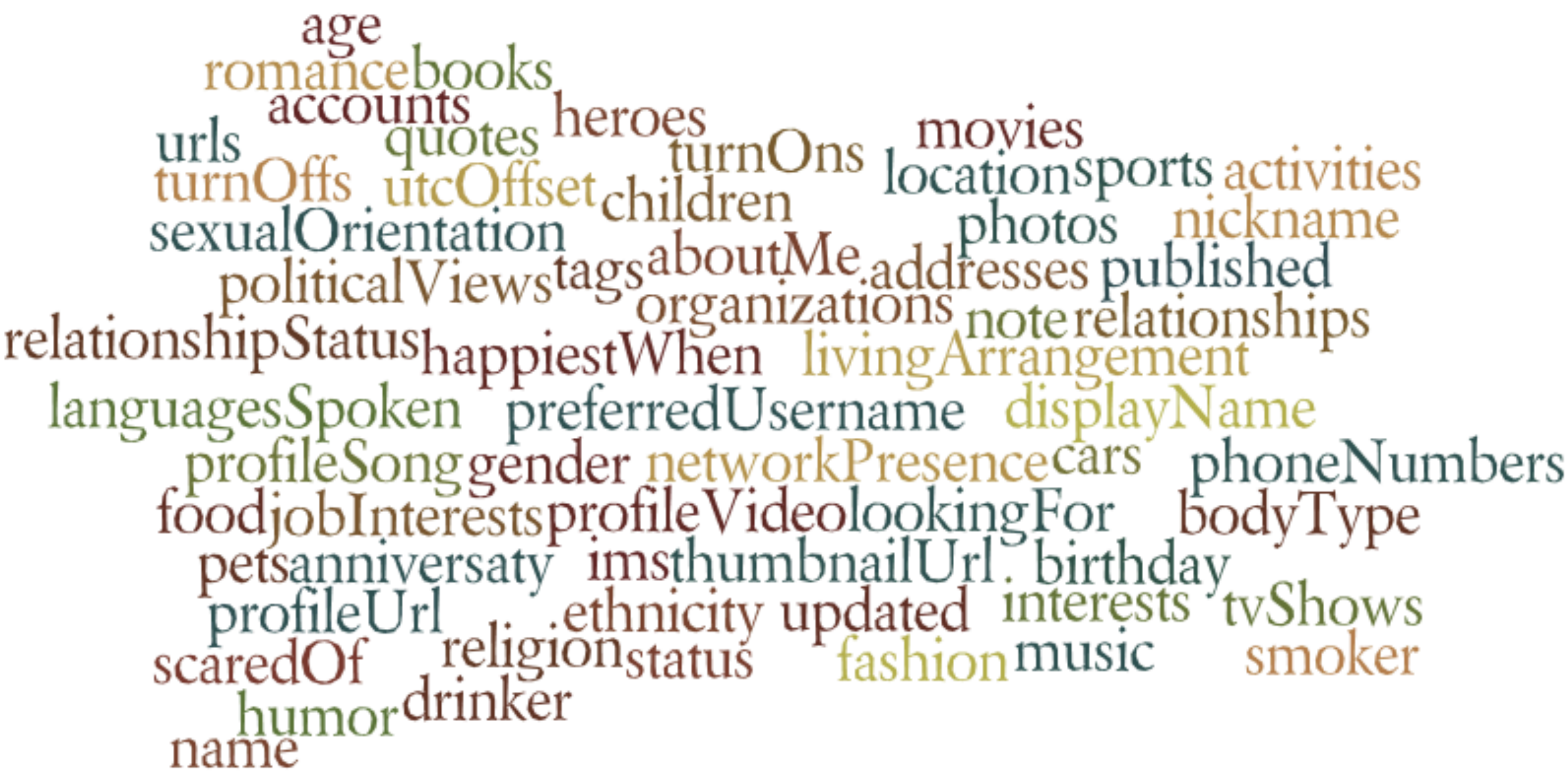
OpenSocial Created for Consumers



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Enterprise-Friendly via Extensions

- Effort underway to define business-friendly profile fields and activity info
- OpenSocial 1.0 allows extensions for container-specific data
- Also have ability to define custom <osml> tags
- Ongoing work to bring together OpenSocial activities with activitystrea.ms

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Our Top Priorities for OpenSocial “1.0 Next”

- Inter-gadget communication
- Improvements to existing OAuth
- View support for Mobile

Target for “1.0 Next” 4Q2010

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Wrap Up & Summary

- OpenSocial defines an open, standards based Web 2.0 application model
- Social Networks can be "domain specific"
- Can build on and leverage what is already in your enterprise

"The enterprise is better when it's social"

Enterprise OpenSocial Resources

- http://opensocial.org
- http://www.opensocial.org/page/enterprise-opensocial
- http://bit.ly/d4pBia
- Hashtag for this talk is: #opensocial

THANK YOU!
Best Practices for Implementing OpenSocial in the Enterprise

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